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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,387	03/15/2001	Craig M. Carpenter	MI22-1559	8779

21567 7590 05/27/2004  
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EXAMINER

ZERVIGON, RUDY

ART UNIT PAPER NUMBER

1763

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/810,387

Applicant(s)

CARPENTER ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 and 37-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 37-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/12/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 4-23, and 25-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukui et al (USPat. 5,002,928). Fukui teaches a deposition apparatus (Figure 1) for depositing superconducting films (column 2, lines 14-36). Although Fukui does not discuss CVD (chemical vapor deposition) operations, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Fukui further teaches a deposition chamber (14) defined partly by a chamber body ("solution-escaping inhibitor"; column 5, lines 1-2) including a lid<sup>1</sup> (top tapered portion of 14), where the lid and the chamber body have a similar thickness (see Figure 1)<sup>2</sup>. Fukui further teaches a needle valve / isolation mechanism (6) that seals fluid flow between an outermost (outside chamber 14) and innermost (inside chamber 14) surface of the chamber body (14; column 4, lines 53-59).

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<sup>1</sup> Lid – 5: something that confines, limits, or suppresses - Merriam-Webster's Collegiate Dictionary - 10th Ed. p.671

<sup>2</sup>Proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. Because the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. However, the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art. (In re Wright, 193 USPQ 332 (CCPA 1977). MPEP 2125.

Art Unit: 1763

Fukui further teaches a part of the valve housing (inside surface of 7; Figure 1; column 4; lines 28-31, 36-39, 53-60) between the innermost (inside chamber 14) and outermost surfaces (outside chamber 14) of the chamber body (14; column 4; lines 28-31, 36-39, 53-60). Fukui further teaches the valve body (1) including a portion of the chamber body (14) as at least a part of the valve housing (column 4; lines 28-31, 36-39, 53-60). Fukui further shows, the valve body (1) having an entirety of a seat (inside surface of 7; Figure 1; column 4; lines 28-31, 36-39, 53-60) within the chamber lid<sup>1</sup> above(top tapered portion of 14). Fukui further teaches at least a part of the process chemical inlet (11) to the valve body (1) between the innermost and outermost surfaces of the chamber body, and wherein the chamber body (14) forms a part of a material inlet (11,12). Fukui further teaches the part of the valve housing (fitting in 14 for valve 1) comprised by the portion of the lid is defined by a cylindrical opening (conduit for stem 3; column 4, line 34) in the lid. The valve body (1) further comprising a stem (3) coincident with the central axis of the cylindrical opening at least partially within the cylindrical opening. Fukui further teaches:

- i. The entirety of the valve seat (inside surface of 7; Figure 1) is between an innermost surface of the lid inside the chamber and an outermost surface of the lid outside the chamber (Figure 1)
- ii. The part of the valve seat (6/7 interface) comprised by the portion of the lid is defined by a beveled and annular lid surface around a cylindrical opening through the lid, the valve body further comprising a plug (6) complementary to the beveled lid surface - see vertical and slanted tapering at the 6/7 interface in Figure 1

Art Unit: 1763

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al (USPat. 5,002,928). Fukui is discussed above. Fukui does not teach that the relative dimensions between Fukui's seat, chamber lid thickness, and chamber lid width as shown by Fukui's Figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Fukui to optimize the relative dimensions of Fukui's seat, chamber lid thickness, and chamber lid width.

Motivation for Fukui to optimize the relative dimensions of Fukui's seat, chamber lid thickness, and chamber lid width is to provide for added structural integrity and/or to accommodate a requisite dimension of the substrate (17, Figure 1). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04). Further, proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. Because the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. However, the description of the article pictured can be relied on, in combination with the drawings, for what

Art Unit: 1763

they would reasonably teach one of ordinary skill in the art. (In re Wright, 193 USPQ 332 (CCPA 1977). MPEP 2125.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al (USPat. 5,002,928) in view of Waterfield (USPat. 4,319,737). Fukui is discussed above. However, Fukui does not teach a diaphragm valve. Waterfield teaches a diaphragm valve (Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Fukui to replace his needle valve with Waterfield's diaphragm valve.

Motivation for Fukui to replace his needle valve with Waterfield's diaphragm valve is to provide an alternate and equivalent valve for delivering process fluids.

6. Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al (USPat. 5,002,928) in view of Jeong, Kyung Cheol (USPat. 5,853,484). Fukui is discussed above. Fukui does not teach his valve body is adapted to receive external control signals.

Jeong teaches valve bodies (32-1; Figure 2) adapted to receive external control signals (22; Figure 2; column 3, lines 1-19) for delivering process gasses to Jeong's CVD chamber (10; Figure 2; column 2; lines 15-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Jeong's control means to Fukui's valve.

Motivation to add Jeong's control means to Fukui's valve is for achieving film thickness uniformity (column 3; lines 11-15).

***Response to Arguments***

7. Applicant's arguments filed March 12, 2004 have been fully considered but they are not persuasive.

8. Applicant argues (Fax Page 12 and 13, second to last paragraphs), with respect to Fukui et al's (USPat. 5,002,928) Figure 1, that "...Applicant notes that claim 1 expressly states that the entirety of the seat is within the thickness of the chamber lid or body where such thickness is defined in claim 1...", and further that "Fukui is required to disclose an entirety of the inside surface of the needle valve holder 7 being within a thickness of the top taper portion of fence 14 ...", and further that "it is clear from the line widths for fence 14 in Figure 1 that it does not disclose ... ". In response, Applicant is directed to the established rulings that proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. (See *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000), MPEP 2125). The Examiner has clearly conveyed in the prior response, by underlined text, his opinion on this regard.

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "No other portion of Fukui offering some indication of the thickness of fence 14 can be identified.") are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), MPEP 2145.

Art Unit: 1763

10. With respect to Applicant's arguments concerning claim 4, the Examiner has already asserted that Fukui further shows, the valve body (1) having an entirety of a seat (inside surface of 7; Figure 1; column 4; lines 28-31, 36-39, 53-60) within the chamber lid (top tapered portion of 14). From Figure 1 it is clearly shown that the "inside surface of 7" follows the same surface as chamber 14, and thus, Fukui's valve body (1) has an entirety of a seat (inside surface of 7; Figure 1; column 4; lines 28-31, 36-39, 53-60) within Fukui's chamber lid (top tapered portion of 14).

11. In response to Applicant's arguments on Fax page 15, the Examiner reaffirms his rejection on the grounds that Fukui's chamber 14 consists of Fukui's valve portion 7 (and vice-versa). If Fukui's valve portions 2-6 were "removed" as Applicant exemplifies, then, as with Applicant's conclusion, "the remaining structural features would not form a complete valve".

12. With respect to Applicant's arguments of fax page 16, Applicant is directed to the body of the above claim rejections. The Examiner reaffirms said rejections.

13. Applicant states (fax page 18), "valve seat (6/7 interface) is comprised by a portion of the lid. However, such allegation is inconsistent with the page 3 allegation that top tapered portion of fence 14 discloses a lid.". In response, the Examiner asserts that nowhere in the Examiner's office action is there inconsistency in view of the well grounded assertion that, as above, Fukui's chamber 14 inner surface consists of Fukui's valve portion 7 inner surface (and vice-versa).

14. Applicant's arguments with respect to claims 41-43 are moot in view of the new grounds of rejection as necessitated by Applicant's amendments.

15. In response to Applicant's position that "No part of fence 14 can be considered in any way integral to ultrasonic wave sprayer 1 or even to needle valve holder 7. Instead, the ultrasonic



Art Unit: 1763

wave sprayer 1 of Fukui is merely an independent device inside through fence 14....". The Examiner disagrees. Applicant's integrity is clearly displayed in Applicant's Figures 2 and 3, as such, the Examiner believes Fukui also teaches Applicant's integrity.

### *Conclusion*

16. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If

Art Unit: 1763

the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at  
(571) 272-1439.

*Andy G. Mills*  
5/28/14